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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/899,593	07/05/2001	Darryl V. Landvater	B06521-00007	4023
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)				
	09/899,593	LANDVATER, DARRYL V.				
Office Action Summary	Examiner	Art Unit				
	Scott L. Jarrett	3623				
The MAILING DATE of this communication appears on the cover sheet with the correspondence address Period for Reply						
A SHORTENED STATUTORY PERIOD FOR REPL' WHICHEVER IS LONGER, FROM THE MAILING D. Extensions of time may be available under the provisions of 37 CFR 1.1 after SIX (6) MONTHS from the mailing date of this communication. If NO period for reply is specified above, the maximum statutory period of Failure to reply within the set or extended period for reply will, by statute Any reply received by the Office later than three months after the mailing earned patent term adjustment. See 37 CFR 1.704(b).	ATE OF THIS COMMUNI 36(a). In no event, however, may a will apply and will expire SIX (6) MON t, cause the application to become Al	CATION. reply be timely filed NTHS from the mailing date of this communication. BANDONED (35 U.S.C. § 133).				
Status						
1) Responsive to communication(s) filed on 26 F	Responsive to communication(s) filed on <u>26 February 2007</u> .					
,	This action is FINAL 2b)⊠ This action is non-final.					
.—	☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is					
closed in accordance with the practice under E	Ex parte Quayle, 1935 C.E	D. 11, 453 O.G. 213.				
Disposition of Claims						
4)⊠ Claim(s) <u>1-43</u> is/are pending in the application.						
4a) Of the above claim(s) <u>13-40</u> is/are withdrawn from consideration.						
5) Claim(s) is/are allowed.						
6)⊠ Claim(s) <u>1-12 and 41-43</u> is/are rejected.						
7) Claim(s) is/are objected to.						
8) Claim(s) are subject to restriction and/o	r election requirement.					
Application Papers	·					
9) The specification is objected to by the Examine	er.					
10) The drawing(s) filed on is/are: a) accepted or b) objected to by the Examiner.						
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).						
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).						
11) The oath or declaration is objected to by the Ex	caminer. Note the attache	d Office Action or form PTO-152.				
Priority under 35 U.S.C. § 119		·				
12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).						
a) ☐ All b) ☐ Some * c) ☐ None of: 1. ☐ Certified copies of the priority documents have been received.						
2. Certified copies of the priority documents have been received in Application No						
3. Copies of the certified copies of the prior						
application from the International Burea	•	•				
* See the attached detailed Office action for a list of the certified copies not received.						
Attachment(s)		.*				
1) Notice of References Cited (PTO-892) 4) Interview Summary (PTO-413)						
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No	s)/Mail Date Informal Patent Application				
3) Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date	6) Other:					

37 CFR § 1.105 - Requirement for Information

Applicant and the assignee of this application are required under 37 CFR 1.105 to provide the following information that the examiner has determined is reasonably necessary to the examination of this application.

The information is required to identify products and services embodying the disclosed subject matter of time-phased sales forecasting and/or time phased replenishment planning and/or replenishment shipment scheduling and identify the properties of similar products and services found in the prior art.

In response to this requirement, please provide the citation and a copy of each publication which any of the applicants authored or co-authored and which describe the disclosed subject matter of time-phased sales forecasting and/or time phased replenishment planning and/or replenishment shipment scheduling.

In response to this requirement, please provide the citation and a copy of each publication that any of the applicants relied upon to develop the disclosed subject matter that describes the applicant's invention, particularly as to developing (time-phased sales forecasting and replenishment planning using seasonal selling profiles and/or randomization techniques). For each publication, please provide a concise explanation

of the reliance placed on that publication in the development of the disclosed subject matter.

In response to this requirement, please provide the names of any products or services that have incorporated the claimed subject matter and for each of the products or services please provide information regarding their public use and/or sale (e.g. product road maps, sales presentations, investor disclosures, case studies, product manuals, product brochures, etc.), and provide a citation and a copy of each publication which any of the applicants authored or co-authored and which describe the disclosed subject matter and/or products or services (e.g. help manuals).

In response to this requirement, please state the specific improvements of the claimed subject matter in claims 1-12 and 41-43 over the disclosed prior art and indicate the specific elements in the claimed subject matter that provide those improvements.

For those claims expressed as means or steps plus function, please provide the specific page and line numbers within the disclosure which describe the claimed structure and acts.

In response to this requirement, please state whether any search of prior art was performed. If a search was performed, please state the citation for each prior art collection searched. If any art retrieved from the search was considered relevant to demonstrating the knowledge of a person having ordinary skill in the art to the disclosed

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(time-phased sales forecasting and/or time phased replenishment planning and/or replenishment shipment scheduling; determining replenishment shipment offsets), please provide the citation for each piece of art considered and a copy of the art.

In responding to those requirements that require copies of documents, where the document is a bound text or a single article over 50 pages, the requirement may be met by providing copies of those pages that provide the particular subject matter indicated in the requirement, or where such subject matter is not indicated, the subject matter found in applicant's disclosure.

The fee and certification requirements of 37 C.F.R. § 1.97 are waived for those documents submitted in reply to this requirement. This waiver extends only to those documents within the scope of this requirement under 37 C.F.R. § 1.105 that are included in the applicant's first complete communication responding to this requirement. Any supplemental replies subsequent to the first communication responding to this requirement and any information disclosures beyond the scope of this requirement under 37 C.F.R. § 1.105 are subject to the fee and certification requirements of 37 C.F.R. § 1.97.

The applicant is reminded that the reply to this requirement must be made with candor and good faith under 37 CFR 1.56. Where the applicant does not have or cannot readily obtain an item of required information, a statement that the item is

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unknown or cannot be readily obtained will be accepted as a complete response to the requirement for that item.

Applicant's are respectfully requested to clearly state the status/availability of each of the above mentioned materials/information, specifically stating whether the information/materials are unknown or not readily available, as allowed for under MPEP 704.12(b), or proprietary/non-public documents and that the applicant does not wish to provide the requested information.

Examiner suggests applicant see MPEP 724 regarding the submittal and treatment of trade secret, proprietary and/or protective order materials/information. If the applicant chooses not to provide materials/information stated as proprietary/non-public documents the response will be considered no compliant and result in the abandonment of the instant application.

This requirement is an attachment of the enclosed Office action. A complete response to the enclosed Office action must include a complete response to this requirement. The time period for reply to this requirement coincides with the time period for reply to the enclosed Office action, which is 3 months.

The period for reply to an office action on the merits is ordinarily set for 3 months.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 26, 2007 has been entered.

Applicant's amendment amended claims 1-12 and added claims 41-43.

Currently Claims 1-43 are pending, with claims 13-40 being withdrawn as being directed to a non-elected invention.

Response to Arguments

2. Applicant's arguments with respect to claims 1-12 and 41-43 have been considered but are moot in view of the new ground(s) of rejection.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e. "aggregating demand for a product with time phasing using seasonal profiles and randomization", Last Paragraph, Page 14 – not in independent claims 1, 7, 9 or 11; "randomization of where to drop the forecasts...", Paragraph 2, Page 15; "specialized

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logic that performs forecasting in integer values spaced over time", Paragraph 3, Page 16) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning (Paragraph 3, Page 19), it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

In response to applicant's argument that there is no suggestion to combine the references, the examiner notes that an obviousness determination is not the result of a rigid formula disassociated from the consideration of the facts of a case. Indeed, the common sense of those skilled in the art demonstrates why some combinations would have been obvious where others would not. See KSR Int'l Co. v. Teleflex Inc., 550 U.S. __ (2007) ("The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.").

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It is noted that the applicant did not challenge the officially cited facts in the previous office action(s) therefore those statements as presented are herein after prior art. Specifically it has been established that it was old and well known in the art at the time of the invention:

- to forecast sales/demand for a plurality of products in a supply chain/network comprising of a plurality of stores; and
- that probability distribution functions are commonly used to model random/uncertain events. For example probability distribution functions are used to approximate customer demand for a product or approximate the arrival times of customers at a store, wherein the random number (offset), selected from the probability distribution function and sometimes scaled, and then added to the beginning of the time period under study and represents the (random) arrival time of the customer at the store or project product demand at a particular point in time.

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Claim Rejections - 35 USC § 103

- 3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
 - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 4. Claims 1-2, 4-9, 11-12 and 41-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masters, James M., Determination of Near Optimal Stock Levels for Multi-Echelon Distribution Inventories (1993) in view of Lowson et al., Quick Response: Managing the Supply Chain to Meet Customer Demand (1999) and further in view of Jenkins et al., U.S. Patent Publication No. 2002/0188499.

Regarding Claims 1, 7, 9 and 11 Masters teaches a system and method for determining time-phased sales forecasts and planned replenishment shipments for products that sell in low volumes in a retail store supply chain comprising (Figure 1):

- determining projected sales of a plurality of low volume products (Paragraphs 1-2, Page 167; Paragraph 2, Page 177;) for a retail store in the supply chain during a first period of time using seasonal selling profiles (patterns) for each of the products during the time period and randomization techniques (probability distributions, random lead times; Paragraph 1, Page173; Paragraphs 2-3, Page 191; Paragraphs 1-3, Page192);
- using the project sales to determine (generate, determine, assign, allocate, schedule, etc.) replenishment shipment times/cycles/requirements/orders for each of

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the low volume products within the first period (replenishment cycle, replenishment orders; Paragraphs 1-2, Page 172; Last Paragraph, Page 173; Figures 2-3).

While the utilization of seasonal profiles (patterns, seasonality, etc.) in forecasts is old and very well known Masters does not expressly teach determining projected sales of a plurality of low volume products for a retail store in the supply chain during a first period of time using seasonal selling profiles as claimed.

Lowson et al., teach determining projected sales of a plurality of products for a retail store in the supply chain during a first period of time using seasonal selling profiles (patterns; Section 5.8, Pages 138-141; Section 8.2, Pages 183-187; Figures 5.9-5.10, 8.3) in an analogous art of determined time-phased sales forecasts and planned replenishment shipments for products in a retail supply chain for the purpose of enabling retailers to adjust product replenishment shipments/orders to account for seasonal patterns and/or to more reasonably predict/forecast product sales/demand (Paragraph 2, Page 98; Paragraph 3, Page 183; Paragraph 3, Page 185).

It would have been obvious to one skilled in the art at the time of the invention that the system and method for determining time-phased sales-forecasts and planned replenishment shipments would have benefited from determining projected sales of a plurality of low volume products for a retail store in the supply chain during a first period of time using seasonal selling profiles in view of the teachings of Lowson et al.; the

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resultant system/method enabling retailers to adjust product replenishment shipments/orders to account for seasonal patterns and/or to more reasonably predict/forecast product sales/demand (Lowson et al.: Paragraph 2, Page 98; Paragraph 3, Page 183; Paragraph 3, Page 185).

Masters does not expressly teach using the project sales to distribute replenishment shipment dates for each of the low volume products within the first period as claimed.

Jenkins et al. teach distributing (generating, determining, assigning, allocating, etc.) within the first time period shipment dates for each of the plurality of products (Paragraphs 0027, 0042, 0044-0046, 0049, 051, 0089, 0093, 0101; Figures 1A-1B; Figure 2, Elements 200, 210; Figure 3, Element 300), via a replenishment subsystem, in an analogous art of time-phase sales forecasting and replenishment requirements planning for the purposes of optimizing product inventories across the supply chain/network (Paragraph 0007, 0014, 0064).

Jenkins et al. further teach a system and method for determining time phased sales forecasts and replenishment shipments (date, quantity, duration, frequency, time-phased inventory plans) for a plurality of products in a supply chain wherein the system/method *adjusts* (varies, spreads-out, assigns, allocates, distributes, delays, time-phases, etc.; Paragraphs 0101, 0216-0217) the replenishment shipments (date, quantity, location) based on a plurality of factors including but not limited to (Paragraphs

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0131, 0174, 0216-0217; Figure 2; Tables 3-6): projected sales/selling profile, seasonal information (Paragraph 0064), products currently in the supply chain (in-transit, on-hand, date-sensitivity, shelf-life, expiration date, minor/major shipments, etc.), calendar restrictions/constraints (Paragraph 0171), shipment aggregation (Paragraph 0174) and the like.

It would have been obvious to one skilled in the art at the time of the invention that the system and method for determining time-phased sales forecasts and planning replenishments as taught by the combination of Masters and Lowson et al. would have benefited from using the project sales to distribute replenishment shipment dates for each of the low volume products within the first period in view of the teachings of Jenkins et al.; the resultant system and method enabling businesses to optimize product inventories across the supply chain/network (Jenkins et al.: Paragraph 0007, 0014, 0064).

It is noted that the phrases "in a way that avoids overstating demand in early portions of said first time period" and "so as to avoid overstating demand at the beginning of said first time period" merely represent non-functional descriptive material as the claim limitation merely recites an intended use of the time-phased sales forecasting and replenishment planning system wherein a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from

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the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

It is noted that "so as to avoid bunching up replenishment shipment dates...in a way that does not reflect actual demand..." merely represents non-functional descriptive material as the claim limitation merely recites an intended use of the time-phased sales forecasting and replenishment planning system wherein a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Regarding Claim 2 Masters teaches a system and method for determining time phased sales forecasts and planned replenishment shipments further comprising generating a random number for each of the plurality of low-volume products ((Paragraphs 1-2, Page 171; Paragraph 1, 5, Page 172; Paragraph 1, Page 173).

Regarding Claim 4 Masters teaches a system and method for determining time phased sales forecasts and planned replenishment shipments further comprising determining different shipment times within the first time period for low volume products having more than one projected sale during the first period ().

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Masters does not expressly teach determining different *shipment dates* for each of the low volume products within the first period as claimed.

Jenkins et al. teach determining different shipment dates within the first time period for each of the plurality of products (Paragraphs 0027, 0042, 0044-0046, 0049, 051, 0089, 0093, 0101; Figures 1A-1B; Figure 2, Elements 200, 210; Figure 3, Element 300), via a replenishment shipment subsystem, in an analogous art of time-phased sales forecasting and replenishment requirements planning for the purposes of optimizing product inventories across the supply chain/network (Paragraph 0007, 0014, 0064).

It would have been obvious to one skilled in the art at the time of the invention that the system and method for time-phased sales forecasting and replenishment planning as taught by the combination of Masters and Lowson et al. would have benefited from determining different shipment dates within the first time period for each of the products in view of the teachings of Jenkins et al.; the resultant system/method enabling retailers to optimize product inventories across the supply chain/network (Jenkins et al.: Paragraph 0007, 0014, 0064).

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Regarding Claims 5 and 8 Masters does not expressly teach adjusting the shipment dates for a plurality of low-volume products when excess product inventory exists as claimed.

Jenkins et al. teach adjusting replenishment shipments (Paragraphs 0049-0050, 0138 0101, 0216-0217) when excess (overproduction, overstock, over shipment, surplus) inventory exists in an analogous art of sales forecasting and replenishment planning for the purposes of avoiding excess/surplus inventory and/or optimizing product inventories in the supply chain/network (Paragraphs 0007, 0014, 0053).

It would have been obvious to one skilled in the art at the time of the invention that the forecasting system and method for determining time-phased sales forecasts using well known randomization techniques to generate forecast sales for low-volume products as taught by the combination of Masters and Lowson et al. would have benefited from adjusting replenishment shipments to avoid excess inventory in view of the teachings of Jenkins et al.; the resultant system and method enabling businesses to optimize product inventories across the supply chain/network (Jenkins et al.: Paragraph 0007, 0014, 0049-0050, 0064).

Regarding Claim 6 Masters teaches a system and method for determining time phased forecasts and planned replenishments for a plurality of products and for a plurality of stores (Paragraphs 1-2, Page 167; Figure 1).

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Regarding Claims 10 and 41-43 Masters teaches calculating an aggregate (total cumulative, warehouse level, etc.) demand for the plurality of low volume products to be shipped on the shipment dates for use by entities that supply the retail stores in the supply chain (Last Paragraph, Page 173; Page 174; Equations 7-8).

Regarding Claim 12 Masters does not expressly teach adjusting the shipment dates for a plurality of low-volume products as claimed.

Jenkins et al. teach adjusting replenishment shipments (Paragraphs 0049-0050, 0138 0101, 0216-0217) in an analogous art of sales forecasting and replenishment planning for the purposes of avoiding excess/surplus inventory and/or optimizing product inventories in the supply chain/network (Paragraphs 0007, 0014, 0053).

It would have been obvious to one skilled in the art at the time of the invention that the forecasting system and method for determining time-phased sales forecasts using well known randomization techniques to generate forecast sales for low-volume products as taught by the combination of Masters and Lowson et al. would have benefited from adjusting replenishment shipments to avoid excess inventory in view of the teachings of Jenkins et al.; the resultant system and method enabling businesses to optimize product inventories across the supply chain/network (Jenkins et al.: Paragraph 0007, 0014, 0049-0050, 0064).

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5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Masters, James M., Determination of Near Optimal Stock Levels for Multi-Echelon Distribution Inventories (1993) in view of Lowson et al., Quick Response: Managing the Supply Chain to Meet Customer Demand (1999) in view of Jenkins et al., U.S. Patent Publication No. 2002/0188499 as applied to claims 1, 9 and 11 above and further in view of van Ryzin, Garrett, Analyzing Inventory Costs and Service in Supply Chains (2001).

Regarding Claim 3 Masters does not expressly teach using the random numbers to determine an offset from the first day of the first time period for each low volume product wherein the offset is used to define the shipment dates as claimed.

van Ryzin, teaches using random numbers to determine an offset from the first day of the first time period for each low volume product wherein the offset is used to define the shipment dates (random lead times; Section 7.2, Page 12) to account for lead times that are not typically constant (Column 1, Paragraphs 3-4, Page 12).

It would have been obvious to one skilled in the art at the time of the invention that the system and method for determining time-phased sales forecasts and planned replenishments for products as taught by the combination of Masters, Lowson et al. and Jenkins et al. would have benefited from using random numbers to determine an offset from the first day of the first time period for each low volume product wherein the offset

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is used to define the shipment dates in view of the teachings of van Ryzin; the resultant system/method enabling retailers to account for lead times that are not typically constant (van Ryzin: Column 1, Paragraphs 3-4, Page 12).

Conclusion

This Office action has an attached requirement for information under 37 C.F.R. § 1.105. A complete response to this Office action must include a complete response to the attached requirement for information. The time period for reply to the attached requirement coincides with the time period for reply to this Office action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Tzvieli, U.S. Patent No. 5,659,593, teach a sales forecasting system and method which incorporates forecast patterns.
- Shipman, U.S. Patent No. 5,819,232, teach a inventory planning and management system and method comprising distribution requirements planning (DRP), demand (sales) forecasting, master production scheduling, and material requirements planning (MRP) portions/subsystems.
- Dvorak, U.S. Patent No. 7,155,402, teach a system and method for sales/demand forecasting wherein sales forecasts incorporate seasonal selling profiles for products.
- Yanagino et al., U.S. Patent No. 7,225,140, teach a sales forecasting and inventory management system and method for forecasting sales for low volume products using randomization techniques (e.g. Monte Carlo).

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- Thomas et al., An Algorithm For Limited Capacity Inventory Problem with Staggering (1983), teaches a system and method for time-phased/staggered inventory forecasting and replenishment scheduling.
- Williams et al., Time-dependent demand in requirements planning (1985), teach a system and method for time-phased sales forecasting and replenishment planning for products having lumpy demand.
- Gallego, The complexity of the staggering problem and other classical inventory problems (1992) teaches an time-phased/staggered inventory management/planning system and method.
- Razi, Periodic review inventory control model for slow moving spare parts
 (1999), teaches a system and method for time-phased sales forecasting and
 replenishment planning for low-volume products.
- Chen et al., A Staggered Ordering Policy For One-Warehouse Multretailer Systems (2000), teaches a system and method for time-phased (staggered) sales forecasting and inventory replenishment planning.
- Favaretto et al., Discrete frequency models for inventory management (2001), teaches time phased sales forecasting and inventory replenishment planning wherein the system/method staggers (distributes, avoids bunching up, etc.) inventory (Abstract).
- Martin, Distribution Resource Planning (1995), teaches a time-phased sales forecasting and replenishment shipment planning system and method for a plurality of products including products with lumpy (e.g. low volume) demand wherein the system accounts for seasonal sales patterns/profiles.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott L. Jarrett whose telephone number is (571) 272-7033. The examiner can normally be reached on Monday-Friday, 8:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hafiz Tariq can be reached on (571) 272-6729. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Scott Harrett Asst: Examiner

January 10, 2008